

Catalogue of American Amphibians and Reptiles.

Hensley, R.L., A.Z. Savit, and R. Powell. 2006. *Anolis schwartzi*.

***Anolis schwartzi* Lazell 1972**

Anolis wattsi: Barbour 1930:88 (part). See **Comment**.

Anolis krugi wattsi: Barbour 1937:121 (part).

Anolis wattsi schwartzi Lazell 1972:32. Type-locality, "Nevis Peak: South slope above Rawlings, 2500 ft., Nevis." Holotype, Museum of Comparative Zoology (MCZ) 127088, an adult male, collected by J.D. Lazell, 15 February 1966 (not examined by authors).

Anolis schwartzi: Roughgarden et al. 1987:507. First use of present combination. See **Remarks**.

Ctenonotus wattsi schwartzi: Schwartz and Henderson 1988:119. See **Remarks**.

• **CONTENT**. No subspecies are recognized.

• **DEFINITION**. *Anolis schwartzi* is a moderately sized anole with a maximum known SVL of 53 mm in males and 46 mm in females (Lazell 1972, Schwartz and Henderson 1991). Head scalation includes loreals in 4–6 rows, 0–1 scale between supraorbital semicircles, 2–4 scales between the interparietal and supraorbital semicircles, 3–4 postrostrals, and 4–6 postmentals. Suboculars are in contact with supralabials. Scales behind the interparietal grade gradually into the smaller dorsals. Dorsal scales are in 44–66 rows, keeled, sometimes tectiform, not imbricate (but sometimes subimbricate), with the two dorsalmost rows enlarged, grading into granules laterally. Ventrals are cycloid to acute, sharply keeled, imbricate, larger than dorsals, and in 19–28 rows. Subdigital lamellae range from 17–23 under the second and third phalanges of the fourth toe and subdigital scales are multicarinate. Subdigital dilations are quite narrow. Four to five vertical rows of scales are on the 10th caudal verticil.

Dorsal ground color in adult males is dark, dingy gray-brown and can develop a faint olive tinge with vague transverse markings. The belly is a dull metallic yellowish brown. The female may have a variable flank stripe that, when present, is always boldest posteriorly. Dewlaps range in color from yellow to deep orange and contains dull whitish scales (Lazell 1972).

• **DIAGNOSIS**. *Anolis schwartzi* is readily distinguished from the only other anole, *A. bimaculatus*, that is endemic to the St. Kitts Bank by a combination of smaller size (adult male *A. bimaculatus* to >100 mm SVL) and the presence of strongly keeled midventral scales (smooth in *A. bimaculatus*). *Anolis schwartzi* is distinguished from other anoles in the *A. wattsi* complex by high number of middorsal scales (19–26 in *A. schwartzi* vs. ≤ 20 in *A. w. wattsi*, *A. w. forresti*, and *A. pogus*), yellow-orange dewlap color (white in *A. pogus* and *A. wattsi forresti*), flank stripe bold posteriorly (absent in *A. pogus* and bold anteriorly in *A.*

w. forresti), and suboculars white to tan (variable in *A. pogus* and blue in *A. wattsi*) (Lazell 1972).

• **DESCRIPTIONS**. The only reliable descriptions are the original by Lazell (1972) and that in Powell et al. (2005), all other published descriptions are composites of lizards in the *A. wattsi* complex (see also **Comment**).



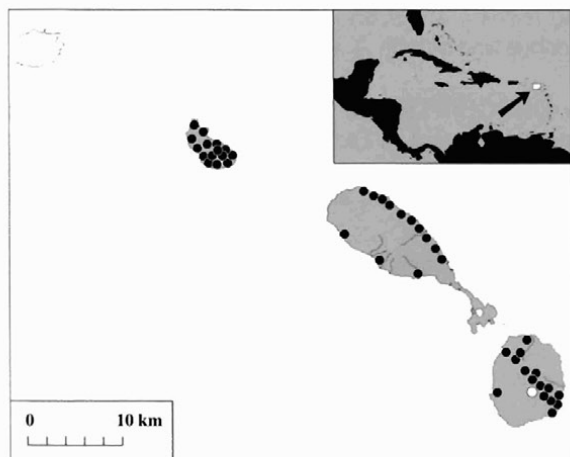
Figure 1. Adult male *Anolis schwartzi* in typical anoline head-down sit-and-wait foraging position (photograph by John S. Parmelee, Jr.).

• **ILLUSTRATIONS**. Fläschendräger and Wijffels (1996) and Powell et al. (2005) included color photographs. Schwartz and Henderson (1985) included a colored drawing. Lazell (1972) provided line drawings of lateral views of the holotype (an adult male), an adult female, and details of the chin pattern. Powell et al. (2005) illustrated habitat on St. Eustatius.

• **DISTRIBUTION**. A St. Christopher (Kitts) Bank endemic, the species is abundant in a variety of natural and altered habitats on St. Eustatius, St. Kitts, and Nevis. The range was previously illustrated by Lazell (1972) and Schwartz and Henderson (1991).

• **FOSSIL RECORD**. Wing and Scudder (1980) found remains of "*Anolis* sp.," some of which may be *A. schwartzi*.

• **PERTINENT LITERATURE**. Powell et al. (2005) provided a description and overviews of distribution, natural history, and conservation status. Additional references to *Anolis schwartzi* are arranged by topic: **biogeography** (Losos 1996, 1997, Pacala and Roughgarden 1985, Peterson 1974, Roughgarden et al. 1987, Roughgarden 1990, and Williams 1969, 1972); **comparative morphology** (Lazell 1972), **competition** (Adolph and Roughgarden 1983, Losos 1994b, Pacala and Roughgarden 1982, 1984, 1985 [cited also in Pough et al. 1998], Roughgarden et al. 1983, Roughgarden and Pacala 1989, Rummel and Roughgarden 1985, and Schall 1992); **field techniques** (Heckel and Roughgarden 1979, and Pacala



Map. Distribution of *Anolis schwartzi* (modified from Schwartz and Henderson 1991). The circle indicates the type-locality; dots indicate other known distributional records.

et al. 1983); **genetics** (Chakraborty et al. 1978, and Fuerst et al. 1977); **husbandry** (Fläschendräger and Wijffels 1996, and Heselhaus and Schmidt 1990); **morphology** (Beuttell and Losos 1999, Losos and de Queiroz 1997, Macrini et al. 2003, Peterson 1974, and Williams 1983); **natural history** (Henderson and Powell 1999, Huey et al. 1983, Lazell 1972, Losos et al. 1993, Pacala and Roughgarden 1984, and Roughgarden et al. 1981); **parasitism** (Dobson et al. 1992, Dobson and Roberts 1994, Goldberg et al. 1996, 1997, Perkins 2001, Schall 1992, Schall and Staats 1997, and Staats and Schall 1996); **phylogeny** (Glossip et al. 1997, Gorman 1973, Gorman and Atkins 1969, Jackman et al. 1999, Losos 1992b, 1994a, Losos and de Queiroz 2001, Roughgarden 1992, Schneider et al. 2001, Stenson et al. 2004, and Williams 1976); **predation** (Adolph and Roughgarden 1983, Heinz et al. 2004, 2005, Henderson and Sajdak 1996, McLaughlin and Roughgarden 1989, and Roughgarden 1995); **size relationships** (Stamps and Andrews 1992); **taxonomy** (Powell and Henderson 2001).

This species (sometimes as *A. watsi*) is included in general works, guides, checklists, and notes by Barbour (1930, 1935, 1937), Breuil (2002), Cochran (1938), Frank and Ramus (1995), Gorman and Kim (1976), Heselhaus and Schmidt (1990), Irschick and Losos (1996), Kenny et al. (1959), Lazell (2003), Losos (1990, 1992a), MacLean et al. (1977), Miles and Dunham (1996), O'Hare and Williams 1994, see also Williams et al. 1995), Parker (1933), Powell and Henderson (2003), Powell et al. (1996), Schwartz and Henderson (1985, 1988, 1991), Schwartz and Thomas (1975), Underwood (1962), van Ditzhuijzen (2004), Williams (1962), and several on-line sites, the most informative of which is managed by S.B. Hedges (<http://evo.bio.psu.edu/caribherp/>).

• **REMARKS.** Considerable confusion has characterized the recognition of this taxon as either a species or subspecies. Roughgarden et al. (1987) and

Burnell and Hedges (1990) listed *A. schwartzi* as a full species, but subsequent authors did not consistently follow their lead (see Powell and Henderson 2001 for discussion).

Guyer and Savage (1987) elevated the anoline genus *Ctenonotus*, into which they (Savage and Guyer 1989) placed *Anolis watsi* (thought at the time to include *A. schwartzi*). Although the recognition of the genera elevated by Guyer and Savage (1987) has been strongly advocated by some workers (e.g. Vitt and Zani 1996), we prefer a more conservative approach until concerns regarding generic relationships among anoles (e.g. Williams 1989) have been addressed.

Kruthoff (1938) listed a "Tree Lizard" distinct from a "Green Lizard" on St. Eustatius; the former may refer to *A. schwartzi* and the latter to *A. bimaculatus*.

• **ETYMOLOGY.** The trivial name is a patronym honoring Albert Schwartz for his recognition that "the St. Kitts Bank populations constituted a valid, different form" (Lazell 1972).

• **COMMENT.** Some references to this species may be included in the literature under *A. watsi* (e.g., Lang 1989) or synonyms associated with that species.

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